Proposed

PERMIT TO OPERATE 9971

and

PART 70 OPERATING PERMIT 9971

PXP - LOMPOC/POINT PEDERNALES
LOMPOC INTERNAL COMBUSTION ENGINES

LOMPOC OILFIELD
SANTA BARBARA COUNTY, CALIFORNIA

OWNER/OPERATOR

Plains Exploration & Production Co. (PXP)

Santa Barbara County
Air Pollution Control District

December 2009

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ABBREVIATIONS/ACRONYMS

AP-42	USEPA's *Compilation of Emission Factors*
APCD	Santa Barbara County Air Pollution Control District
API	American Petroleum Institute
ASTM	American Society for Testing Materials
BACT	Best Available Control Technology
bpd	barrels per day (1 barrel = 42 gallons)
CAM	compliance assurance monitoring
CEMS	continuous emissions monitoring
dscf	dry standard cubic foot
EU	emission unit
°F	degree Fahrenheit
gal	gallon
gr	grain
HAP	hazardous air pollutant (as defined by CAAA, Section 112(b))
H_2S	hydrogen sulfide
I&M	inspection & maintenance
k	kilo (thousand)
l	liter
lb	pound
lbs/day	pounds per day
lbs/hr	pounds per hour
LACT	Lease Automatic Custody Transfer
LPG	liquid petroleum gas
M	mega (million)
MACT	Maximum Achievable Control Technology
MM	million
MW	molecular weight
NEI	net emissions increase
NG	natural gas
NSPS	New Source Performance Standards
O_2	oxygen
OCS	outer continental shelf
ppm (vd or w)	parts per million (volume dry or weight)
psia	pounds per square inch absolute
psig	pounds per square inch gauge
PRD	pressure relief device
PTO	Permit to Operate
RACT	Reasonably Available Control Technology
ROC	reactive organic compounds, same as "VOC" as used in this permit
RVP	Reid vapor pressure
scf	standard cubic foot
scfd (or scfm)	standard cubic feet per day (or per minute)
SIP	State Implementation Plan
STP	standard temperature (60°F) and pressure (29.92 inches of mercury)
THC	Total hydrocarbons
tpy, TPY	tons per year
TVP	true vapor pressure
USEPA	United States Environmental Protection Agency
VE	visible emissions
VRS	vapor recovery system

1.0 Introduction

1.1 Purpose

General: The Santa Barbara County Air Pollution Control District (APCD) is responsible for implementing all applicable federal, state and local air pollution requirements that affect any stationary source of air pollution in Santa Barbara County. The federal requirements include regulations listed in the Code of Federal Regulations: 40 CFR Parts 50, 51, 52, 55, 61, 63, 68, 70 and 82. The State regulations may be found in the California Health & Safety Code, Division 26, Section 39000 et seq. The applicable local regulations can be found in the APCD's Rules and Regulations. This is a combined permitting action that covers both the Federal Part 70 permit (*Part 70 Operating Permit 9971*) as well as the State Operating Permit (*Permit to Operate 9971*).

Part 70 Permitting: The initial Part 70 permit for these engines was issued October 17, 2000 in accordance with the requirements of the APCD' s Part 70 operating permit program. This is the third renewal of the Part 70 permit and may include additional applicable requirements. The Lompoc internal combustion engines are a part of the PXP Lompoc/Point Pedernales Stationary Source, which is a major source for VOC[1] and NO_x. Conditions listed in this permit are based on federal, state or local rules and requirements. Sections 9.A, 9.B and 9.C of this permit are enforceable by the APCD, the USEPA and the public since these sections are federally-enforceable under Part 70. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally-enforceable. Conditions listed in Section 9.D are "APCD-only" enforceable.

Pursuant to the stated aims of Title V of the CAAA of 1990 (i.e., the Part 70 operating permit program), this permit has been designed to meet two objectives. First, compliance with all conditions in this permit would ensure compliance with all federally-enforceable requirements for the facility. Next, the permit would be a comprehensive document to be used as a reference by the permittee, the regulatory agencies and the public to assess compliance.

1.2 Facility Overview

1.2.1 General Overview: The Lompoc internal combustion engines, located approximately 2.5 miles north of the city of Lompoc, were previously owned and operated by Unocal. On April 9, 1996, Unocal transferred this facility to Nuevo Company as the sole owner and Torch Operating Company the operator. On May 14, 1997 the APCD issued a Transfer of Ownership to reflect this change. On April 9, 1997 Bellwether Exploration Company acquired a 19.7-percent ownership in the Lompoc/Point Pedernales Stationary Source which was subsequently transferred back to Nuevo. On February 7, 2000 the APCD issued a transfer of ownership to reflect this change. On February 27, 2001, operatorship

[1] VOC as defined in Regulation XIII has the same meaning as reactive organic compounds as defined in Rule 102. The term ROC shall be used throughout the remainder of this document, but where used in the context of the Part 70 regulation, the reader shall interpret the term as VOC.

PXP- Lompoc/Point Pedernales Stationary Source

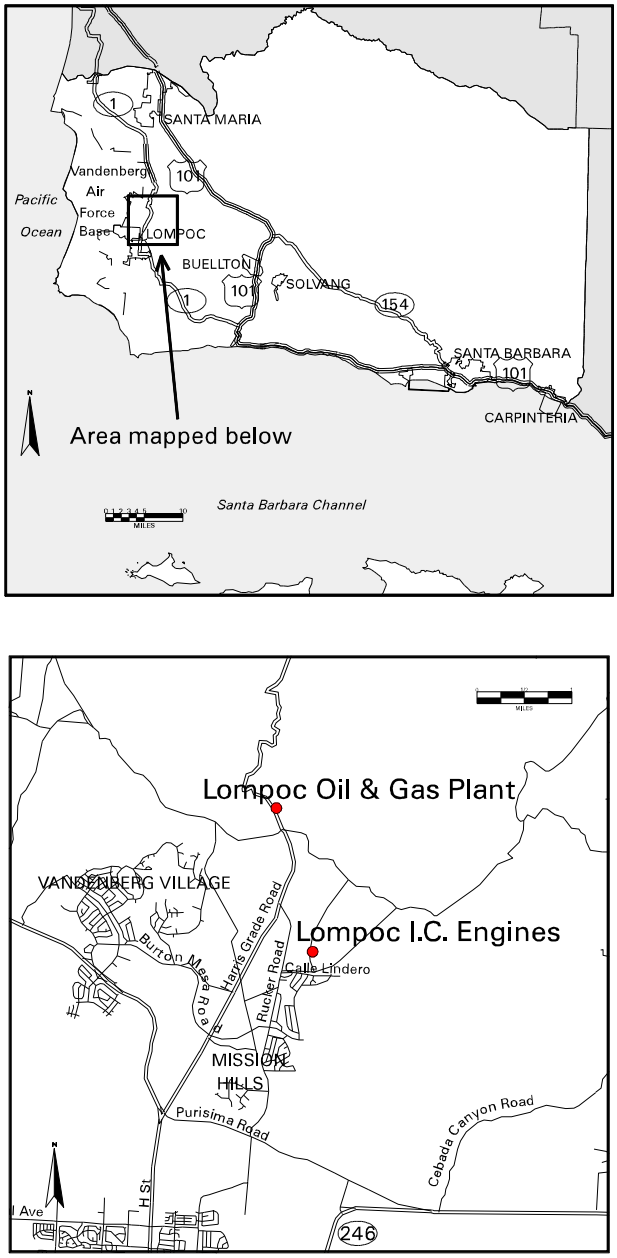

Figure 1.1 - Location Map for the Lompoc Internal Combustion Engines

was transferred from Torch Operating Company to Nuevo. On September 23, 2004 ownership and operatorship was transferred from Nuevo to PXP. For APCD regulatory purposes, the facility location is in the Northern Zone of Santa Barbara County[2]. Figure 1.1 shows the relative location of the facility within the county. The Lompoc internal combustion engines were in use prior to 1979 and are a part of the *PXP Lompoc/Point Pedernales Stationary Source* (SSID 4632), which consists of the following facilities:

- La Purisima Lease (FID 3069)
- Lompoc Oil and Gas Plant (FID 3095)
- Jesus Maria "D" Lease (FID 3309)
- Orcutt Fee (FID 3310)
- Murphy Brothers Lease (FID 3799)
- Eefson Lease (FID 3802)
- Jesus Maria "A" Lease (FID 3832)
- Lompoc Fee (FID 3837)
- Hill Lease (FID 3839)
- Arkley Fee (FID 4117)
- Lompoc Internal Combustion Engines (FID 4218)
- Platform Irene (FID 8016)

The Lompoc internal combustion engines consist of the following engine types:

- Eight (8) unmodified, rich-burn, non-cyclic internal combustion engines
- Four (4) derated, rich-burn, non-cyclic internal combustion engines

These engines are fired on field gas and are located at various locations throughout the stationary source. These engines are used to drive pumping units, pumps, compressors and other oil and gas production equipment. All of the engines are fired on field natural gas that is treated for H_2S and distributed from the Jesus Maria Lease. Engines that are located on Platform Irene and at the Lompoc Oil and Gas Plant are not included in this permit.

1.2.2 Facility New Source Review Overview: All of the Lompoc internal combustion engines were in place and operating before a permit to operate was required. Therefore, the equipment was not subject to New Source Review requirements. One combined Authority to Construct/Permit to Operate (ATC/PTO 9971) was issued to replace two engines with electric motors. This modification created Emission Reduction Credits (ERCs). ERC DOI 0005 and ERC Certificate 0005-0903 have been issued to PXP. There was no emission increase associated with ATC/PTO 9971. Table 1.1 provides a summary of the New Source Review history of the Lompoc internal combustion engines.

[2] APCD Rule 102, Definition: " Northern Zone"

Table 1.1
New Source Review Overview

Permit Number	Issuance Date	Permitted Modification
ATC/PTO 9971	09/21/98	Generation of ERCs through replacement of two engines with electric motors.

1.3 Emission Sources

The emissions from this facility are entirely due to combustion of field natural gas in 12 internal combustion engines. Section 4 of the permit provides the APCD's engineering analysis of these emission sources. Section 5 of the permit describes each engine and the allowable emissions from each engine.

1.4 Emission Control Overview

All 12 of the Lompoc internal combustion engines are uncontrolled. Eight of the ICEs are unmodified units rated less than 50 bhp and four have been derated below 50 bhp by the use of orifice plates.

1.5 Offsets/Emission Reduction Credit Overview

Project ROC emissions increases are currently required to be offset based on APCD Rule 802 offset thresholds. Offsets were initially required for ROC, NAROC (non-alkane ROC) and NO_x. Section 7 discusses the offset requirements for the Point Pedernales Project.

1.6. Part 70 Operating Permit Overview

1.6.1 Federally-enforceable Requirements: All federally-enforceable requirements are listed in 40 CFR Part 70.2 (*Definitions*) under "applicable requirements". These include all SIP-approved APCD Rules, all conditions in the APCD-issued Authority to Construct permits, and all conditions applicable to major sources under federally promulgated rules and regulations. All these requirements are enforceable by the public under CAAA. *(See Tables 3.1 and 3.2 for a list of federally-enforceable requirements)*

1.6.2 Insignificant Emissions Units: Insignificant emission units are defined under APCD Rule 1301 as any regulated air pollutant emitted from the unit, excluding HAPs, that are less than 2 tons per year based on the unit's potential to emit and any HAP regulated under section 112(g) of the Clean Air Act that does not exceed 0.5 ton per year based on the unit's potential to emit. Insignificant activities were listed in the Part 70 permit renewal application with supporting calculations. Applicable requirements may apply to insignificant units. There are no insignificant emission units associated with the Lompoc ICEs.

1.6.3 Federal Potential to Emit: The federal potential to emit (PTE) of a stationary source does not include fugitive emissions of any pollutant, unless the source is: (1) subject to a federal

NSPS/NESHAP requirement, or (2) included in the 29-category source list specified in 40 CFR 51.166 or 52.21. The federal PTE does include all emissions from any insignificant emissions units. *(See Section 5.4 for the federal PTE for this source)*

1.6.4 Permit Shield: The operator of a major source may be granted a shield: (a) specifically stipulating any federally-enforceable conditions that are no longer applicable to the source and (b) stating the reasons for such non-applicability. The permit shield must be based on a request from the source and its detailed review by the APCD. Permit shields cannot be indiscriminately granted with respect to all federal requirements. PXP made no requests for a permit shield.

1.6.5 Alternate Operating Scenarios: A major source may be permitted to operate under different operating scenarios, if appropriate descriptions of such scenarios are included in its Part 70 permit application and if such operations are allowed under federally-enforceable rules. PXP made no requests for permitted alternative operating scenarios.

1.6.6 Compliance Certification: Part 70 permit holders must certify compliance with all applicable federally-enforceable requirements including permit conditions. Such certification must accompany each Part 70 permit application; and, be re-submitted annually on the anniversary date of the permit or on a more frequent schedule specified in the permit. A "responsible official" of the owner/operator company signs each certification whose name and address is listed prominently in the Part 70 permit. *(see Section 1.6.9 below)*

1.6.7 Permit Reopening: Part 70 permits are re-opened and revised if the source becomes subject to a new rule or new permit conditions are necessary to ensure compliance with existing rules. The permits are also re-opened if they contain a material mistake or the emission limitations or other conditions are based on inaccurate permit application data.

1.6.8 Hazardous Air Pollutants (HAPs): Part 70 permits also regulate emission of HAPs from major sources through the imposition of maximum achievable control technology (MACT), where applicable. The federal PTE for HAP emissions from a source is computed to determine MACT or any other rule applicability. *(see Sections 4.10 and 5.5)*

1.6.9 Responsible Official: The designated responsible official is:

Mr. Thomas Goeres, Operations Manager
Plains Exploration & Production Company
201 South Broadway
Orcutt, California 93455

2.0 Process Description

2.1 Process Summary

2.1.1 Unmodified IC Engines. Eight (8) of the ICEs are rated below 50 hp and are not subject to Rule 333 emission limits.

2.1.2 Derated IC Engines. Four (4) of the ICEs are equipped with orifice plates to derate each engine to below 50 hp. Derating is not considered to be an emission control. These engines are not subject to Rule 333 emission limits.

2.2 Support Systems

There are no additional support systems for the Lompoc internal combustion engines.

2.3 Maintenance/Degreasing Activities

2.3.1 Paints and Coatings. The use of paints and coatings at the PXP Point Pedernales/Lompoc Stationary Source are discussed in the permits for individual Lompoc leases, Platform Irene and the Lompoc Oil and Gas Plant.

2.3.2 Solvent Usage. The use of solvents at the PXP Point Pedernales/Lompoc Stationary Source are discussed in the permits for individual Lompoc leases, Platform Irene and the Lompoc Oil and Gas Plant.

2.4 Other Processes

2.4.1 Unplanned Activities/Emissions. PXP does not anticipate or foresee any circumstances that would require special equipment use and result in excess emissions.

2.5 Detailed Process Equipment Listing

Refer to Table 5.1-1 for a complete listing of all permitted equipment.

3.0 Regulatory Review

This Section identifies the federal, state and local rules and regulations applicable to the Lompoc internal combustion engines.

3.1 Rule Exemptions Claimed

No rule exemptions were claimed.

3.2 Compliance with Applicable Federal Rules and Regulations

3.2.1 40 CFR Parts 51/52 *{New Source Review (Nonattainment Area Review and Prevention of Significant Deterioration)}*: The Lompoc internal combustion engines were installed and permitted prior to the applicability of these regulations. All modifications are subject to the APCD's New Source Review regulation. Compliance with the regulation assures compliance with 40 CFR 51/52.

3.2.2 40 CFR Part 60 *{New Source Performance Standards}*. This facility is not currently subject to the provisions of this Subpart.

3.2.3 40 CFR Part 61 *{NESHAP}*. This facility is not currently subject to the provisions of this Subpart.

3.2.4 40 CFR Part 63 *{MACT}*. On June 17, 1999, EPA promulgated Subpart HH, a National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage. PXP submitted information in October 2000 that the LOF qualified for the " black oil" exemption per section 63.760(e)(1) of the subpart. The APCD approved this exemption on June 5, 2002. Thus, only the recordkeeping requirements specified in condition 9.B.7 apply.

3.2.5 40 CFR Part 64 *{Compliance Assurance Monitoring}*. This rule became effective on April 22, 1998 and affects emission units at the source subject to a federally enforceable emission limit or standard that use a control device to comply with the emission standard, and either pre-control or post-control emissions exceed the Part 70 source emission thresholds. Compliance with this rule was evaluated and it was determined that there are no emission units at this facility subject to CAM.

3.2.6 Subpart ZZZZ *{NESHAP - Stationary Internal Combustion Engines}*. There are no emission units at this lease subject to this MACT.

3.2.7 Subpart DDDDD *{Industrial/Commercial/Institutional Boilers and Process Heaters}*. There are no emission units at this lease subject to this MACT.

3.2.8 Subpart EEEE *{Organic Liquid Distribution}*. There are no emission units at this lease subject to this MACT.

3.2.9 40 CFR Part 70 *{Operating Permits}*. This Subpart is applicable to the Lompoc internal combustion engines. Table 3.1 lists the federally-enforceable APCD promulgated rules that are "generic" and apply to the Lompoc internal combustion engines. Table 3.2 lists the federally-enforceable APCD promulgated rules that are "unit-specific" that apply to the Lompoc internal combustion engines. These tables are based on data available from the APCD's administrative files and from PXP's Part 70 Operating Permit application. Table 3.4 includes the adoption dates of these rules.

In its Part 70 permit application (Form I), PXP certified compliance with all existing APCD rules and permit conditions. This certification is also required of PXP semi-annually. Issuance of this permit and compliance with all its terms and conditions will ensure that PXP complies with the provisions of all applicable Subparts.

3.3 Compliance with Applicable State Rules and Regulations

3.3.1 Division 26: Air Resources *{California Health & Safety Code}*. The administrative provisions of the Health & Safety Code apply to this facility and will be enforced by the APCD. These provisions are APCD-enforceable only.

3.3.2 California Administrative Code Title 17. These sections specify the standards by which abrasive blasting activities are governed throughout the State. All abrasive blasting activities are required to conform to these standards. Compliance will be assessed through onsite inspections. These standards are APCD-enforceable only. However, CAC Title 17 does not preempt enforcement of any SIP-approved rule that may be applicable to abrasive blasting activities.

3.4 Compliance with Applicable Local Rules and Regulations

3.4.1 Applicability Tables: In addition to Tables 3.1 and 3.2, Table 3.3 lists the non-federally-enforceable APCD promulgated rules that apply to the Lompoc internal combustion engines. Table 3.4 lists the adoption date of all rules applicable to this permit at the date of this permit's issuance.

3.4.2 Rules Requiring Further Discussion: Since the previous permit renewal, inspections were conducted on December 18, 2007 and March 13, 2007. The inspection reports indicate that the facility was in compliance with all APCD rules and PTO conditions at the time of these inspections. This section provides a more detailed discussion regarding the applicability and compliance of certain rules.

APCD Rule 210 - Fees: Pursuant to Rule 201.G, APCD permits are reevaluated every three years. This includes the re-issuance of the underlying permit to operate. Also included are the PTO fees. The fees for this facility are based on APCD Rule 210, Fee Schedule A. Attachment 10.3 presents the fee calculations for the reevaluated permit.

Rule 301 - Circumvention: This rule prohibits the concealment of any activity that would otherwise constitute a violation of Division 26 (Air Resources) of the California H&SC and the SBCAPCD rules and regulations. To the best of the APCD's knowledge, PXP is operating in compliance with this rule.

Rule 302 - Visible Emissions: This rule prohibits the discharge from any single source any air contaminants for which a period or periods aggregating more than three minutes in any one hour which is as dark or darker in shade than a reading of 1 on the Ringlemann Chart or of such opacity to obscure an observer's view to a degree equal to or greater than a reading of 1 on the Ringlemann Chart. All internal combustion engines are subject to this rule, and periodic monitoring is required for diesel-fired IC engines.

Rule 303 - Nuisance: This rule prohibits the operator from causing a public nuisance due to the discharge of air contaminants. Based on the source's location, the potential for public nuisance is small.

Rule 309 - Specific Contaminants: Under Section "A", no source may discharge sulfur compounds and combustion contaminants (particulate matter) in excess of 0.2-percent as SO_2 (by volume) and 0.3 gr/scf (at 12% CO_2) respectively. The natural gas fired engines are not expected to approach these limits.

Rule 310 - Odorous Organic Compounds: This rule prohibits the discharge of H_2S and organic sulfides that result in a ground level impact beyond the property boundary in excess of either

0.06 ppm_v averaged over 3 minutes and 0.03 ppm_v averaged over 1 hour. No measured data exists to confirm compliance with this rule.

Rule 333 - Control of Emissions from Reciprocating Internal Combustion Engines: This rule applies to all engines with a rated brake horsepower of 50 or greater that are fueled by liquid or gaseous fuels. As indicated above in section 1.4, all ICEs associated with the Lompoc ICEs are either rated below 50 Bhp or have been derated to less than 50 Bhp, therefore, there are no internal combustion units subject to this rule.

Rule 361 - Small Boilers, Steam Generators and Process Heaters: This rule sets emission standards for external combustion units with a rated heat input greater than 2.0 MMBtu/hr but less than 5.0 MMBtu/hr. There are no units located at this facility subject to this rule.

Rule 505 - Breakdown Conditions: This rule describes the procedures that PXP must follow when a breakdown condition occurs to any emissions unit associated with the Lompoc internal combustion engines. A breakdown condition is defined as an unforeseeable failure or malfunction of (1) any air pollution control equipment or related operating equipment which causes a violation of an emission limitation or restriction prescribed in the APCD Rules and Regulations, or by State law, or (2) any in-stack continuous monitoring equipment, provided such failure or malfunction:

a. Is not the result of neglect or disregard of any air pollution control law or rule or regulation;

b. Is not the result of an intentional or negligent act or omission on the part of the owner or operator;

c. Is not the result of improper maintenance;

d. Does not constitute a nuisance as defined in Section 41700 of the Health and Safety Code;

e. Is not a recurrent breakdown of the same equipment.

3.5 Compliance History

This section contains a summary of the compliance history for this facility and was obtained from documentation contained in the APCD's administrative file.

3.5.1 Variances: There have been no variances issued to this facility since the previous permit renewal.

3.5.2 Violations: There have been no enforcement actions issued to this facility since the previous permit renewal.

3.5.3 Significant Historical Hearing Board Actions: There have been no significant Hearing Board actions since the previous permit reevaluation.

Table 3.1 - Generic Federally-Enforceable APCD Rules

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 101: Compliance by Existing Installations	All emission units	Emission of pollutants
RULE 102: Definitions	All emission units	Emission of pollutants
RULE 103: Severability	All emission units	Emission of pollutants
RULE 201: Permits Required	All emission units	Emission of pollutants
RULE 202: Exemptions to Rule 201	Emission units, as listed in form 1302-H of the Part 70 app.	Insignificant activities/emissions, per size/rating/function
RULE 203: Transfer	All emission units	Change of ownership
RULE 204: Applications	All emission units	Addition of new equipment of modification to existing equipment.
RULE 205: Standards for Granting Permits	All emission units	Emission of pollutants
RULE 206: Conditional Approval of ATC or PTO	All emission units	Applicability of relevant Rules
RULE 207: Denial of Applications	All emission units	Applicability of relevant Rules
RULE 208: Action on Applications – Time Limits	All emission units. Not applicable to Part 70 permit applications.	Addition of new equipment of modification to existing equipment.
RULE 212: Emission Statements	All emission units	Administrative
RULE 301: Circumvention	All emission units	Any pollutant emission
RULE 302 : Visible Emissions	All emission units	Particulate matter emissions
RULE 303: Nuisance	All emission units	Emissions that can injure, damage or offend.
RULE 304: Particular Matter - Northern Zone	Each PM Source	Emissions of PM in effluent gas
RULE 309: Specific Contaminants	All emission units	Combustn.contaminant emission
RULE 311: Sulfur Content of Fuel	All combustion units	Use of fuel containing sulfur
RULE 317: Organic Solvents	Emission units using solvents	Solvent used in process operations.
RULE 321: Solvent Cleaning Ops.	Emission units using solvents.	Solvent used in process ops.

Table 3.1 - Continued

Generic Requirements	Affected Emission Units	Basis for Applicability
RULE 322: Metal Surface Coating Thinner and Reducer	Emission units using solvents.	Solvent used in process operations.
RULE 323: Architectural Coatings	Paints used in maintenance and surface coating activities.	Application of architectural coatings.
RULE 324: Disposal and Evaporation of Solvents	Emission units using solvents.	Solvent used in process operations.
RULE 353: Adhesives and Sealants	Emission units using adhesives and solvents.	Adhesives and sealants used in process operations.
RULE 505.A, B1, D: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
RULE 603: Emergency Episode Plans	Stationary sources with PTE greater than 100 tpy	PXP Lompoc is a major source.
REGULATION VIII: New Source Review	All emission units	Addition of new equipment of modification to existing equipment. Applications to generate ERC Certificates.
REGULATION XIII (RULES 1301-1305): Part 70 Operating Permits	All emission units	PXP Lompoc is a major source.

Table 3.2 - Unit-Specific Federally-Enforceable APCD Rules

Unit-Specific Requirements	Affected Emission Units	Basis for Applicability
RULE 325: Crude Oil Production and Separation	Wash tank, crude storage tanks, wastewater tanks	Pre-custody transfer oil service tanks with capacities exceeding exemption limits.
RULE 331: Fugitive Emissions Inspection & Maintenance	All components (valves, flanges, seals, compressors and pumps) used to handle oil and gas:	Components emit fugitive ROCs. ID# 6-1
RULE 343: Petroleum Storage Tank Degassing	Wash tank, crude storage tanks, wastewater tanks	Tanks used in storage of organic liquids with vapor pressure > 2.6 psia.
RULE 344: Petroleum Wells, Sumps and Cellars	Well cellars, sump, wastewater pits	Compliance with this rule provides a 70% reduction in well cellar ROC emissions. This rule also provides exemptions to sumps at this facility.

Table 3.3 - Non-Federally-Enforceable APCD Rules

Requirement	Affected Emission Units	Basis for Applicability
RULE 210: Fees	All emission units	Administrative
RULES 310: Odorous Organics	All emission units	Emissions of Organic Sulfides
RULES 501-504: Variance Rules	All emission units	Administrative
RULE 505.B2, B3, C, E, F, G: Breakdown Conditions	All emission units	Breakdowns where permit limits are exceeded or rule requirements are not complied with.
RULES 506-519: Variance Rules	All emission units	Administrative

Table 3.4 – Adoption Dates of APCD Rules Applicable at Issuance of Permit

Rule No.	Rule Name	Adoption Date
Rule 101	Compliance by Existing Installations: Conflicts	June 1981
Rule 102	Definitions	April 17, 1997
Rule 103	Severability	October 23, 1978
Rule 201	Permits Required	April 17, 1997
Rule 202	Exemptions to Rule 201	April 17, 1997
Rule 203	Transfer	April 17, 1997
Rule 204	Applications	April 17, 1997
Rule 205	Standards for Granting Permits	April 17, 1997
Rule 206	Conditional Approval of ATCs or PTOs	October 15, 1991
Rule 208	Action on Applications - Time Limits	April 17, 1997
Rule 212	Emission Statements	October 20, 1992
Rule 301	Circumvention	October 23, 1978
Rule 302	Visible Emissions	June 1981
Rule 303	Nuisance	October 23, 1978
Rule 304	Particular Matter – Northern Zone	October 23, 1978
Rule 305	Particulate Matter Concentration – Southern Zone	October 23, 1978

Table 3.4 - Continued

Rule No.	Rule Name	Adoption Date
Rule 309	Specific Contaminants	October 23, 1978
Rule 310	Odorous Organic Sulfides	October 23, 1978
Rule 311	Sulfur Content of Fuels	October 23, 1978
Rule 317	Organic Solvents	October 23, 1978
Rule 321	Solvent Cleaning Operations	September 18, 1997
Rule 322	Metal Surface Coating Thinner and Reducer	October 23, 1978
Rule 323	Architectural Coatings	July 18, 1996
Rule 324	Disposal and Evaporation of Solvents	October 23, 1978
Rule 325	Crude Oil Production and Separation	January 25, 1994
Rule 326	Storage of Reactive Organic Compound Liquids	December 14, 1993
Rule 331	Fugitive Emissions Inspection and Maintenance	December 10, 1991
Rule 333	Control of Emissions from Reciprocating ICEs	April 17, 1997
Rule 342	Control of Oxides of Nitrogen (NO_x) from Boilers, Steam Generators and Process Heaters	April 17, 1997
Rule 343	Petroleum Storage Tank Degassing	December 14, 1993
Rule 344	Petroleum Sumps, Pits and Well Cellars	November 10, 1994
Rule 346	Loading of Organic Liquid Cargo Vessels	October 13, 1992
Rule 353	Adhesives and Sealants	August 19, 1999
Rule 359	Flares and Thermal Oxidizers	June 28, 1994
Rule 360	Emissions of Oxides of Nitrogen from Large Water Heaters and Small Boilers	October 17, 2002
Rule 361	Small Boilers, Steam Generators and Process Heaters	January 17, 2008
Rule 505	Breakdown Conditions (Section A, B1 and D)	October 23, 1978
Rule 603	Emergency Episode Plans	June 15, 1981
Rule 801	New Source Review	April 17, 1997
Rule 802	Nonattainment Review	April 17, 1997
Rule 803	Prevention of Significant Deterioration	April 17, 1997

Rule 804	Emission Offsets	April 17, 1997
Rule 805	Air Quality Impact and Modeling	April 17, 1997

Table 3.4 - Continued

Rule No.	Rule Name	Adoption Date
Rule 806	Emission Reduction Credits	April 17, 1997
Rule 901	New Source Performance Standards (NSPS)	May 16, 1996
Rule 1001	National Emission Standards for Hazardous Air Pollutants (NESHAPS)	October 23, 1993
Rule 1301	General Information	September 18, 1997
Rule 1302	Permit Application	November 9, 1993
Rule 1303	Permits	November 9, 1993
Rule 1304	Issuance, Renewal, Modification and Reopening	November 9, 1993
Rule 1305	Enforcement	November 9, 1993

4.0 Engineering Analysis

4.1 General

The engineering analyses performed for this permit were limited to the review of:

- → facility process flow diagrams
- → emission factors and calculation methods for each emissions unit
- → emission control equipment (including RACT, BACT, NSPS, NESHAP, MACT)
- → emission source testing, sampling, CEMS, CAM
- → process monitors needed to ensure compliance

Unless noted otherwise, default ROC/THC reactivity profiles from the APCD's document titled "*VOC/ROC Emission Factors and Reactivities for Common Source Types*" dated July 13, 1998 (ver 1.1) was used to determine non-methane, non-ethane fraction of THC.

4.2 Stationary Combustion Sources

4.2.1 The equipment included in this permit consists of twelve (12) field-gas-fired, piston IC engines used to drive pumping units, pumps, compressors, and other equipment used in oil production operations.

Eight (8) are unmodified engines rated at less than 50-hp. Four (4) engines have been derated to less than 50-hp through the use of orifice plates. All of the engines are uncontrolled. Emission rates are based on the following emission calculation:

$$ER = [(EF \times SCFPP \times HHV) \div 10^6]$$

where:

ER = Emission rate (lb/period)
EF = Pollutant specific emission factor (lb/MMBtu)
SCFPP = gas flow rate per operating period (scf/period)
HHV = gas higher heating values (900 Btu/scf)

Emission Factors (EF) for ICEs

Pollutant	Emission Factor	Units	Notes
NO_x	1.905	lb/MMBtu	1
ROC	0.103	lb/MMBtu	1
CO	1.600	lb/MMBtu	1
PM	0.010	lb/MMBtu	1
PM_{10}	0.010	lb/MMBtu	1
SO_x as SO_2	0.149 = (0.169)(ppmv) / HHV	lb/MMBtu	2

Notes for both tables above:

1. SBCAPCD Permit Guidance Document for Reciprocating ICEs dated January 27, 1998, page 6, Table 3.6-1, which values are from AP-42 and District Hearing Board dictated gas-fired engine EFs.
2. Based on mass balance of sulfur in gaseous fuel and limit of 796 ppm_v Sulfur.

4.3 BACT/NSPS/NESHAP/MACT

To date, this facility has not triggered Best Available Control Technology (BACT), New Source Performance Standards (NSPS) National Emission Standards For Hazardous Air Pollutants (NESHAP) or Maximum Available Control Technology (MACT).

A National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage was promulgated on June 17, 1999. As described in section 3.2.4, this facility qualified for the black oil exemption and is required only to maintain the records specified in permit condition 9.B.7.

4.4 CEMS/Process Monitoring/CAM

4.4.1 CEMS: There are no CEMS at this facility.

4.4.2 Process Monitoring: In many instances, ongoing compliance beyond a single (snap shot) source test is assessed by the use of process monitoring systems. Examples of these monitors include: engine hour meters, fuel usage meters, water injection mass flow meters, flare gas flow meters and hydrogen sulfide analyzers. It is important that they be well maintained and calibrated to ensure that the required accuracy and precision of the devices are within specifications. This permit requires fuel use metering of the ICEs as detailed in the *Fuel Use Monitoring Plan.*

4.4.3 CAM: There are no emission units associated with the Lompoc ICEs subject to the USEPA's Compliance Assurance Monitoring Assurance (CAM) rule.

4.5 Source Testing/Sampling

Source testing is not required for the engines included in this permit. Sampling is required in order to ensure compliance with permitted emission limits, prohibitory rules and the assumptions that form the basis for issuing operating permits.

At a minimum, PXP shall sample, monitor, or analyze as applicable the process streams below on a periodic basis, pursuant to APCD Rules and standards:

→ Fuel (produced) Gas: Analysis for gross heating value (HHV), H_2S (by Draeger tube) and fuel sulfur content, *annually*.

All sampling and analyses are required to be performed according to APCD-approved procedures and methodologies. Typically, the appropriate ASTM methods are acceptable. It is important that all sampling and analysis be traceable by chain of custody procedures.

4.6 Part 70 Engineering Review: Hazardous Air Pollutant Emissions

Hazardous air pollutant emissions from the different categories of emission units at the Lompoc internal combustion engines are based on emission factors listed in USEPA AP-42. Where no emission factors are available, the HAP fractions from the ARB VOC Speciation Manual – Second Edition (August 1991) are used in conjunction with the ROC emission factor for the equipment item in question.

The HAP emission factors are listed in Table 5.4-1. Potential HAP emissions from the facility are computed and listed in Table 5.4-2.

5.0 Emissions

5.1 General

The facility was analyzed to determine all air-related emission sources. Emissions calculations are divided into "permitted" and "exempt" categories. APCD Rule 202 determines permit-exempt equipment. The permitted emissions for each emissions unit is based on the equipment's potential-to-emit (as defined by Rule 102).

Section 5.2 details the permitted emissions for each emissions unit. Section 5.3 details the overall permitted emissions for the facility based on reasonable worst-case scenarios using the potential-to-emit for each emissions unit. Section 5.4 provides the federal potential to emit calculation using the definition of potential to emit used in Rule 1301. Section 5.5 provides the estimated HAP emissions from the facility. Section 5.6 provides the estimated emissions from permit-exempt equipment and also serves as the Part 70 list of insignificant emissions. Section 5.7 provides the net emissions increase calculation for the facility and the stationary source. The APCD uses a computer database to accurately track the emissions from a facility. Attachment 10.4 contains the APCD's documentation for the information entered into that database.

5.2 Permitted Emission Limits - Emission Units

Each emissions unit associated with the facility was analyzed to determine the potential-to-emit for the following pollutants:

- ➔ Nitrogen Oxides (NO_x) [3]
- ➔ Reactive Organic Compounds (ROC)
- ➔ Carbon Monoxide (CO)
- ➔ Sulfur Oxides (SO_x) [4]
- ➔ Particulate Matter (PM) [5]
- ➔ Particulate Matter smaller than 10 microns (PM_{10})

Permitted emissions are calculated for both short term (daily) and long term (annual) time periods. Section 4.0 (Engineering Analysis) provides a general discussion of the basic calculation methodologies and emission factors used. The reference documentation for the specific emission calculations, as well as detailed calculation spreadsheets, may be found in Section 4 and Attachments 10.1 and 10.2 respectively. Table 5.1-1 provides the basic operating characteristics. Table 5.1-2 provides the specific emission factors. Tables 5.1-3 and 5.1-4 show the permitted short-term and permitted long-term emissions for each unit or operation. In the

[3] Calculated and reported as nitrogen dioxide (NO_2)

[4] Calculated and reported as sulfur dioxide (SO_2)

[5] Calculated and reported as all particulate matter smaller than 100 μm

table, the last column indicates whether the emission limits are federally-enforceable. Those emissions limits that are federally-enforceable are indicated by the symbol "FE". Those emissions limits that are APCD-only enforceable are indicated by the symbol "A".

5.3 Permitted Emission Limits - Facility Totals

The total potential-to-emit for all emission units associated with this facility were analyzed. This analysis looked at the reasonable worst-case operating scenarios for each operating period. The equipment operating in each of the scenarios are presented below. Unless otherwise specified, the operating characteristics defined in Table 5.1-1 for each emission unit are assumed. Table 5.2 shows the total permitted emissions for the facility.

5.4 Part 70: Federal Potential to Emit for the Facility

Table 5.4 lists the federal Part 70 potential to emit.

5.5 Part 70: Hazardous Air Pollutant Emissions for the Facility

Hazardous air pollutants (HAP) emission factors, for each type of emissions unit, are listed in Table 5.4-1. Potential HAP emissions, based on the worst-case scenario, are shown in Table 5.4-2.

5.6 APCD Exempt Emission Sources

Per Rule 202, maintenance activities such as painting and surface coating qualify for a permit exemption, but may contribute to facility emissions.

5.7 *Net Emissions Increase Calculation*

The net emissions increase for the Lompoc internal combustion engines since November 15, 1990 (the day the federal Clean Air Act Amendments were adopted in 1990) is listed in Table 5.0. For all pollutants the stationary source NEI is shown in the table below:

Stationary Source Net Emission Increase, 1990 Baseline)

Term	Active Permits	ROC	NOx	SOx	CO	PM_{10}	PM
P1	PTO 8827[1] (08/21/92)						
	lb/day	85.44	--	--	--	--	--
	TPY	15.61	--	--	--	--	--
P1	ATC/PTO 10111 (08/26/99) Jesus Maria " A" (LOF)						
	lb/day	2.75	--	--	--	--	--
	TPY	0.50					
P1	ATC 9200[2,3] (06/08/95)						
	lb/day	9.26	--	--	--	--	--
	TPY	1.69	--	--	--	--	--
P1	Lompoc ICEs						
	lb/day	0.24	5.04	0.48	1.20	--	--
	TPY	0.05	0.96	0.07	0.21	--	--
P1	ATC 9522-01[2] (07/29/97)						
	lb/day	0.33	--	--	--	--	--
	TPY	0.06	--	--	--	--	--
P1	ATC 9522-04[4] (02/03/99)						
	lb/day	40.33	--	--	--	--	--
	TPY	7.36	--	--	--	--	--
P1	PTO 9522[5]						
	lb/day	1.57	20.86	9.08	12.34	3.10	3.10
	TPY	0.31	2.64	0.64	1.98	0.53	1.98
P1	ATC/PTO 11435 (03/30/05)						
	lb/day	--		--	--	--	--
	TPY	--	1.61	--	--	--	--
P1	ATC 12006 (03/31/06)						
	lb/day	0.01	0.07	0.11	0.09	0.01	0.01
	TPY	--	0.01	0.02	0.02	--	--
P1	ATC/PTO 12683 (9/25/08)						
	lb/day	4.70	--	--	--	--	--
	TPY	0.88	--	--	--	--	--
P1	ATC 13015 (2/03/09)						
	lb/day	0.045	--	--	--	--	--
	TPY	0.008	--	--	--	--	--
	ATC 13044 (03/06/09)						
	lb/day	0.0882	--	--	--	--	--
	TPY	0.016	--	--	--	--	
NEI	Total						
	lb/day	144.76	25.97	9.67	13.63	3.11	3.11
	TPY	26.48	5.22	0.73	2.21	0.53	1.98

Table Notes:

[1]PTO 6708-05 documents current HS&P non-methane/non-ethane fugitive NEI emissions of 158.23 lb/day and 28.88 TPY. These figures include fugitive emission increases permitted in PTO 8827 issued 8/21/92 which are the only NEI

emissions from of this total attributable to FNEI90 emissions. A APCD increment fee modeling letter dated 2/15/91 is the only available documentation from which the actual increase in emissions associated with PTO 8827 can be determined. This letter indicates the PTO 8827 fugitives resulted in a total HS&P fugitive emission rate increase from 0.49 g/sec (17.01 TPY) to 1.07 g/sec (37.05 TPY). The 0.58 g/sec increase represents 54 percent of the total, therefore, for purposes of estimating the current FNEI90 associated with PTO 8827, it was assumed that 54 percent of the total HS&P fugitive emissions listed in PTO 6708-05 represent the PTO 8827 FNE90 increase.

[2] All fugitive emission components for ATCs 9200 and 9522-01 were incorporated into the correlation equation (CE) emission calculation provided in ATC 9522-04, thus, ATC 9522-04 superseded these ATCs. However, this was done solely for the purpose of consistency, i.e., so that emissions from all gas plant components are based on the CEs to allow for more uniform I&M procedures and compliance determinations. As such, the original project emissions based on the Fugitive Component Count methodology, documented in the original ATCs are the actual NEI increases resulting from these projects rather than the recalculated values based on the CEs. The NEI values for these projects in the above table are taken from the original permits.

[3]ATC 9200 lists 12.96 lbs/day and 2.38 tpy. These values were adjusted for ethane as follows: a Tecolote factor of 0.0304 lb/day/comp was used for oil components and APCD Policy and Procedure 6100.061.1996 for gas components. These revised values are documented in PTO 6708-05 (page 1 and Table 10.6-2) and are shown above.

[4]ATC 9522-04 was issued for the purpose of recalculating the fugitive emissions from the gas plant using the Correlation Equations. This recalculated emission rate superseded the original fugitive emission rate as documented in ATC 9522 (based on the Fugitive Component Count methodology). ATC 9522-04 also included the fugitive emission components from ATCs 9200 and ATC 9522-01, however these recalculated emissions, for purposes of NEI, did not supersede the original emission rates (see note 2 above). Therefore, the emission rate shown in the above table for ATC 9522-04 is the recalculated emission rate for ATC 9522 only and was taken from Table 9.1 of ATC 9522-04.

[5]PTO 9522 supersedes ATC 9522-04 however the fugitive emission totals shown in Table 6 of PTO 9522 include the recalculated fugitive emissions from ATCs 9200 and 9522-01. The actual NEI fugitive emission increase from PTO 9522 is that shown for ATC 9522-04 in the above table. As such, the NEI values for PTO 9522 in the above table include only the thermal oxidizer and flare (ATC 9522-03) emissions from PTO 9522 Table 6.

ATC/PTO 11435. Emission limit increases for the supply boat.

ATC 12006: Flare pilot fuel increase

ATC/PTO 12683: Installation of a FWKO at Platform Irene.

ATC 13015: Relocation of pig trap to LOGP.

ATC 13044: Replacement of three gas coolers at Platform Irene.

Table 5.1-1
Permit to Operate 9971
PXP Lompoc Oilfield Internal Combustion Engines
Operating Equipment Description

Emission Unit	Engine Use	Serial # or Tag #	APCD Device No.	Fuel	% Sulfur By Volume	Max BHP	BHP Limited By	BSFC BTU/bhp-hr	Operating Limitations Use (MMBTU) Hourly	Annual	Load	Max Load Schedule Hours	Day	Qtr	Year
Unmodified Rich-Burn Non-Cyclic Internal Combustion Engines															
M & M 425	Pumping Unit	11605	4504	FNG	0.0796	39.0	Nameplate	10,500	0.41	3,587	1	1	24	2,190	8,760
M & M HEB	Pumping Unit	9709	4505	FNG	0.0796	46.0	Nameplate	11,000	0.51	4,433	1	1	24	2,190	8,760
M & M 605	Pumping Unit	9305	4506	FNG	0.0796	46.0	Nameplate	11,000	0.51	4,433	1	1	24	2,190	8,760
M & M 605	Pumping Unit	8501	4508	FNG	0.0796	46.0	Nameplate	11,000	0.51	4,433	1	1	24	2,190	8,760
M & M HEB	Pumping Unit	9229	7034	FNG	0.0796	46.0	Nameplate	11,000	0.51	4,433	1	1	24	2,190	8,760
M & M HEB	Pumping Unit	8483	4509	FNG	0.0796	46.0	Nameplate	11,000	0.51	4,433	1	1	24	2,190	8,760
M & M 605	Pumping Unit	7440	4498	FNG	0.0796	46.0	Nameplate	11,000	0.51	4,433	1	1	24	2,190	8,760
M & M 605	Pumping Unit	12020	4495	FNG	0.0796	46.0	Nameplate	11,000	0.51	4,433	1	1	24	2,190	8,760
Derated Rich-Burn Non-Cyclic Internal Combustion Engines															
M & M 504	Pumping Unit	12203	4497	FNG	0.0796	48.9	Orifice Plare @ 0.935	8,800	0.43	3,770	1	1	24	2,190	8,760
Wauk 145	Pumping Unit	11528	4510	FNG	0.0796	49.5	Orifice Plare @ 0.922	10,000	0.50	4,336	1	1	24	2,190	8,760
Wauk 140	Pumping Unit	11662	4499	FNG	0.0796	49.5	Orifice Plare @ 0.980	9,100	0.45	3,946	1	1	24	2,190	8,760
Wauk 140	Pumping Unit	11436	4500	FNG	0.0796	49.5	Orifice Plare @ 0.980	9,100	0.45	3,946	1	1	24	2,190	8,760

Note: Engine 10473 was replaced with Engine 11436.

Table 5.1-2
Permit to Operate 9971
PXP Lompoc Oilfield Internal Combustion Engines
Emission Factors

Emission Unit	Serial # or Tag #	APCD Device No.	NOx	ROC	CO	SOx	PM	PM10	E F Units	References
Unmodified Rich-Burn Non-Cyclic Internal Combustion Engines										
M & M 425	11605	4504	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
M & M HEB	9709	4505	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
M & M 605	9305	4506	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
M & M 605	8501	4508	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
M & M HEB	9229	7034	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
M & M HEB	8483	4509	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
M & M 605	7440	4498	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
M & M 605	12020	4495	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
Derated Rich-Burn Non-Cyclic Internal Combustion Engines										
M & M 504	12203	4497	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
Wauk 145	11528	4510	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
Wauk 140	11662	4499	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A
Wauk 140	11436	4500	1.905	0.103	1.600	0.149	0.010	0.010	lb/MMBtu	A

Table 5.1-3
Permit to Operate 9971
PXP Lompoc Oilfield Internal Combustion Engines
Hourly and Daily Emissions

Emission Unit	Serial # or Tag #	APCD Device No.	NOx		ROC		CO		SOx		PM		PM10		Enforcebility	
			lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	lb/hr	lb/day	Type	Basis
Unmodified Rich-Burn Non-Cyclic Internal Combustion Engines																
M & M 425	11605	4504	0.78	18.72	0.04	1.01	0.66	15.72	0.06	1.47	0.00	0.10	0.00	0.10	A	--
M & M HEB	9709	4505	0.96	23.13	0.05	1.25	0.81	19.43	0.08	1.82	0.01	0.12	0.01	0.12	A	--
M & M 605	9305	4506	0.96	23.13	0.05	1.25	0.81	19.43	0.08	1.82	0.01	0.12	0.01	0.12	A	--
M & M 605	8501	4508	0.96	23.13	0.05	1.25	0.81	19.43	0.08	1.82	0.01	0.12	0.01	0.12	A	--
M & M HEB	9229	7034	0.96	23.13	0.05	1.25	0.81	19.43	0.08	1.82	0.01	0.12	0.01	0.12	A	--
M & M HEB	8483	4509	0.96	23.13	0.05	1.25	0.81	19.43	0.08	1.82	0.01	0.12	0.01	0.12	A	--
M & M 605	7440	4498	0.96	23.13	0.05	1.25	0.81	19.43	0.08	1.82	0.01	0.12	0.01	0.12	A	--
M & M 605	12020	4495	0.96	23.13	0.05	1.25	0.81	19.43	0.08	1.82	0.01	0.12	0.01	0.12	A	--
Derated Rich-Burn Non-Cyclic Internal Combustion Engines																
M & M 504	12203	4497	0.82	19.67	0.04	1.06	0.69	16.52	0.06	1.54	0.00	0.10	0.00	0.10	A	--
Wauk 145	11528	4510	0.94	22.63	0.05	1.22	0.79	19.01	0.07	1.78	0.00	0.12	0.00	0.12	A	--
Wauk 140	11662	4499	0.86	20.59	0.05	1.11	0.72	17.30	0.07	1.62	0.00	0.11	0.00	0.11	A	--
Wauk 140	11436	4500	0.86	20.59	0.05	1.11	0.72	17.30	0.07	1.62	0.00	0.11	0.00	0.11	A	--

Table 5.1-4
Permit to Operate 9971
PXP Lompoc Oilfield Internal Combustion Engines
Quarterly and Annual Emissions

Emission Unit	Serial # or Tag #	APCD Device No.	NOx		ROC		CO		SOx		PM		PM10		Enforcebility	
			TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	TPQ	TPY	Type	Basis
Unmodified Rich-Burn Non-Cyclic Internal Combustion Engines																
M & M 425	11605	4504	0.85	3.42	0.05	0.18	0.72	2.87	0.07	0.27	0.00	0.02	0.00	0.02	A	--
M & M HEB	9709	4505	1.06	4.22	0.06	0.23	0.89	3.55	0.08	0.33	0.01	0.02	0.01	0.02	A	--
M & M 605	9305	4506	1.06	4.22	0.06	0.23	0.89	3.55	0.08	0.33	0.01	0.02	0.01	0.02	A	--
M & M 605	8501	4508	1.06	4.22	0.06	0.23	0.89	3.55	0.08	0.33	0.01	0.02	0.01	0.02	A	--
M & M HEB	9229	7034	1.06	4.22	0.06	0.23	0.89	3.55	0.08	0.33	0.01	0.02	0.01	0.02	A	--
M & M HEB	8483	4509	1.06	4.22	0.06	0.23	0.89	3.55	0.08	0.33	0.01	0.02	0.01	0.02	A	--
M & M 605	7440	4498	1.06	4.22	0.06	0.23	0.89	3.55	0.08	0.33	0.01	0.02	0.01	0.02	A	--
M & M 605	12020	4495	1.06	4.22	0.06	0.23	0.89	3.55	0.08	0.33	0.01	0.02	0.01	0.02	A	--
Derated Rich-Burn Non-Cyclic Internal Combustion Engines																
M & M 504	12203	4497	0.90	3.59	0.05	0.19	0.75	3.02	0.07	0.28	0.00	0.02	0.00	0.02	A	--
Wauk 145	11528	4510	1.03	4.13	0.06	0.22	0.87	3.47	0.08	0.32	0.01	0.02	0.01	0.02	A	--
Wauk 140	11662	4499	0.94	3.76	0.05	0.20	0.79	3.16	0.07	0.29	0.00	0.02	0.00	0.02	A	--
Wauk 140	11436	4500	0.94	3.76	0.05	0.20	0.79	3.16	0.07	0.29	0.00	0.02	0.00	0.02	A	--

Table 5.2
Permit to Operate 9971
PXP Lompoc Oilfield Internal Combustion Engines
Total Permitted Facility Emissions

A. HOURLY (lb/hr)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	11.01	0.60	9.24	0.86	0.06	0.06
	11.01	**0.60**	**9.24**	**0.86**	**0.06**	**0.06**

B. DAILY (lb/day)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	264.16	14.28	221.86	20.73	1.39	1.39
	264.16	**14.28**	**221.86**	**20.73**	**1.39**	**1.39**

C. QUARTERLY (tpq)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	12.05	0.65	10.12	0.95	0.06	0.06
	12.05	**0.65**	**10.12**	**0.95**	**0.06**	**0.06**

D. ANNUAL (tpy)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	48.21	2.61	40.49	3.78	0.25	0.25
	48.21	**2.61**	**40.49**	**3.78**	**0.25**	**0.25**

Table 5.3
Permit to Operate 9971
PXP Lompoc Oilfield Internal Combustion Engines
Net Emissions Increase

A. HOURLY (lb/hr)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	0.21	0.01	0.05	0.02	0.00	0.00
	0.21	**0.01**	**0.05**	**0.02**	**0.00**	**0.00**

B. DAILY (lb/day)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	5.04	0.24	1.20	0.48	0.01	0.01
	5.04	**0.24**	**1.20**	**0.48**	**0.01**	**0.01**

C. QUARTERLY (tpq)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	0.24	0.01	0.05	0.02	0.00	0.00
	0.24	**0.01**	**0.05**	**0.02**	**0.00**	**0.00**

D. ANNUAL (tpy)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	0.96	0.05	0.21	0.07	0.00	0.00
	0.96	**0.05**	**0.21**	**0.07**	**0.00**	**0.00**

Table 5.4
Permit to Operate 9971
PXP Lompoc Oilfield Internal Combustion Engines
Federal Potential to Emit

A. HOURLY (lb/hr)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	11.01	0.60	9.24	0.86	0.06	0.06
Exempt Emissions	0.00	0.00	0.00	0.00	0.00	0.00
	11.01	**0.60**	**9.24**	**0.86**	**0.06**	**0.06**

B. DAILY (lb/day)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	264.16	14.28	221.86	20.73	1.39	1.39
Exempt Emissions	0.00	0.00	0.00	0.00	0.00	0.00
	264.16	**14.28**	**221.86**	**20.73**	**1.39**	**1.39**

C. QUARTERLY (tpq)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	12.05	0.65	10.12	0.95	0.06	0.06
Exempt Emissions	0.00	0.00	0.00	0.00	0.00	0.00
	12.05	**0.65**	**10.12**	**0.95**	**0.06**	**0.06**

D. ANNUAL (tpy)

Equipment Category	NO_X	ROC	CO	SO_X	PM	PM_{10}
Internal Combustion Engines	48.21	2.61	40.49	3.78	0.25	0.25
Exempt Emissions	0.00	0.00	0.00	0.00	0.00	0.00
	48.21	**2.61**	**40.49**	**3.78**	**0.25**	**0.25**

Table 5.5-1
Permit to Operate 9971
PXP Lompoc Oilfield Internal Combustion Engines
Hazardous Pollutant Emission Factors

		Emission Factors						
Equipment Category	**Burn**	**Formaldehyde**	**Acrolein**	**Acetaldehyde**	**Benzene**	**Toluene**	**Units**	**References**
Internal Combustion Engines	Rich	1.33E-02	1.33E-03	2.52E-03	1.48E-03	4.96E-04	lb/MMBtu	USEPA AP-42 (2/98) Table 3.2-4

Table 5.5-2
Permit to Operate 9971
PXP Lompoc Oilfield Internal Combustion Engines
Hazardous Pollutant Emissions

	Formaldehyde		Acrolein		Acetaldehyde		Benzene		Toluene	
Equipment Category	**lb/day**	**ton/year**	**lb/day**	**ton/year**	**lb/day**	**ton/year**	**lb/day**	**ton/year**	**lb/day**	**ton/year**
Internal Combustion Engines	0.13	0.37	0.01	0.04	0.02	0.07	0.01	0.04	0.00	0.01

Note:
Based on CAAA, Section 112 (n) (4) stipulations, the HAP emissions listed above can not be aggregated at the source for any purpose, including determination of HAP major source status for MACT applicability.

6.0 Air Quality Impact Analyses

6.1 Modeling

Air quality modeling has not been required for the Lompoc internal combustion engines.

6.2 Increments

An air quality increment analysis has not been required for the Lompoc internal combustion engines.

6.3 Monitoring

Air quality monitoring is not required for the Lompoc internal combustion engines.

6.4 Health Risk Assessment

A health risk assessment has not been performed for the combined PXP Lompoc/Point Pedernales Stationary Source. However, a health risk assessment was performed for the Lompoc Stationary Source prior to being combined with the Point Pedernales Stationary Source.

The PXP Lompoc Stationary Source was subject to the Air Toxics "Hot Spots" Program (AB 2588). A health risk assessment (HRA) for the Lompoc facilities was prepared by the APCD on May 31, 1996 under the requirements of the AB 2588 program. The HRA is based on 1994 toxic emissions inventory data submitted to the APCD.

Based on the 1994 toxic emissions inventory, a cancer risk of about 2 per million at the property boundary was estimated for the PXP Lompoc Stationary Source. This risk is primarily due to benzene emitted at the site. Additionally, chronic and acute noncarcinogenic risks of 0.08 and 0.06 have been estimated by the APCD and are mainly due to H_2S emissions. Approximately 527 pounds of benzene and about 310 pounds of H_2S were emitted from the PXP Lompoc Stationary Source in 1994. The cancer and noncancer risk projections are less than the APCD's AB 2588 significance thresholds of 10 in a million and 1.0, respectively.

7.0 CAP Consistency, Offset Requirements and ERCs

7.1 General

Santa Barbara County has been classified as non attainment for the state eight-hour ozone standard as well as the state 24-hour and annual PM_{10} ambient air quality standards. The County is either in attainment of or unclassified with respect to all other state ambient air quality standards.

Santa Barbara County's air quality has historically violated federal ozone standards. Since 1999 however, local air quality data show that every monitoring location in the County complied with the federal one-hour ambient air quality standard for ozone. The Santa Barbara County Air Pollution District adopted the 2001 Clean Air Plan (2001 CAP) that demonstrated attainment of the federal one-hour ozone standard and continued maintenance of that standard

through 2015. Consequently, on August 8, 2003, the United States Environmental Protection Agency (USEPA) designated Santa Barbara County as an attainment area for the federal one-hour ozone standard.

On June 15, 2004, USEPA replaced the federal one-hour ozone standard with an eight-hour ozone standard. This eight-hour ozone standard, originally promulgated by USEPA on July 18, 1997, was set at 0.08 parts per million measured over eight hours and is more protective of public health and more stringent than the federal one-hour standard. In March 2008, USEPA lowered that standard to 0.075 parts per million. While USEPA has yet to formally designate Santa Barbara County with respect to the 0.075 parts per million standard, the state has recommended to USEPA that Santa Barbara County be designated as attainment.

Therefore, emissions from all emission units at the stationary source and its constituent facilities must be consistent with the provisions of the USEPA and State approved Clean Air Plans (CAP) and must not interfere with progress toward attainment or maintenance of federal and state ambient air quality standards. Under APCD regulations, any modifications to these engines (or the Point Pedernales/Lompoc Oil Field Stationary Source) that result in an emissions increase of any nonattainment pollutant exceeding 25 lbs/day must apply BACT (NAR). Additional increases may trigger offsets at the source or elsewhere so that there is a net air quality benefit for Santa Barbara County. These offset threshold levels are 55 lbs/day for all non-attainment pollutants except PM_{10} for which the level is 80 lbs/day. These thresholds apply to net emission increases since November 15, 1990 as defined in District Rule 801.

7.2 Clean Air Plan

On August 16, 2007, the APCD Board adopted the 2007 Clean Air Plan to chart a course of action that provided for ongoing maintenance of the federal eight-hour ozone standard through the year 2014, as well as the expeditious attainment of the state one-hour ozone standard. These plans were developed for Santa Barbara County as required by both the 1998 California Clean Air Act and the 1990 Federal Clean Air Act Amendments. Santa Barbara County has now attained the state one-hour ozone standard but does not attain the state eight-hour ozone standard.

In 2010 the APCD will update those provisions of the 2007 Clean Air Plan which demonstrate expeditious attainment of the state eight-hour ozone standard. No changes will be made 2007 Clean Air Plan sections which demonstrate continued maintenance of the federal eight-hour ozone standard.

7.3 Offset Requirements

APCD rules and regulations require that emissions from the entire project, when considered in conjunction with emission reductions for existing sources, result in a Net Air Quality Benefit. In addition, project emissions must be consistent with the AQAP and not interfere with reasonable further progress towards attainment and maintenance of ozone standards.
The Point Pedernales Project originally triggered offsets, however, during initial permitting, the Lompoc Oil Field was not associated with the project and was a separate stationary source. The primary project components were the LOGP and Platform Irene. Due to installation of the gas plant

at the LOGP in 1996 however, operations at the LOF and LOGP became interrelated and subsequently, the APCD made a determination that the LOF and the Point Pedernales Project constituted a single stationary source. As a result, the existing NEI (FNEI90) associated with the LOF facilities at that time was required to be offset. A detailed discussion of these emissions and offsets is provided in Section 7.3.5 of PTO 6708**.** Since ROC emission for the stationary source are currently over 55 lb/day, all project increases in ROC emissions are subject to offsets There is no NEI specifically associated with the LOF ICEs.

7.4 Emission Reduction Credits

One combined Authority to Construct/Permit to Operate (ATC/PTO 9971) was issued September 21, 1998 for the replacement of two engines with electric motors. This action created ERCs through the permanent removal of two engines, Waukesha 140 (s/n: 11925) and Leroi 226 (s/n: 10407). This provided 0.04 tons/quarter of NO_x ERCs and 0.0006 tons/quarter of ROC ERCs and 0.08 tons/quarter of CO ERCs. ERC DOI 0005 and ERC Certificate 008-0903 were issued to PXP. ERC Certificate 008 was partially used on 3/22/99 and the remainder (0.03 tpq NO_x, 0.0005 tpq, ROC, 0.08 CO) was issued as ERC Certificate 015.

8.0 Lead Agency Permit Consistency

The Santa Barbara Planning and Development Department is the lead agency for this project. To the best of the APCD's knowledge, this permit is consistent with all permitting requirements of the lead agency permit.

9.0 Permit Conditions

This section lists the applicable permit conditions for the Lompoc internal combustion engines. Section A lists the standard administrative conditions. Section B lists 'generic' permit conditions, including emission standards, for all equipment in this permit. Section C lists conditions affecting specific equipment. Section D lists non-federally enforceable (i.e., APCD only) permit conditions. Conditions listed in Sections A, B and C are enforceable by the USEPA, the APCD, the State of California and the public. Conditions listed in Section D are enforceable only by the APCD and the State of California. Where any reference contained in Sections 9.A, 9.B or 9.C refers to any other part of this permit, that part of the permit referred to is federally enforceable.

For the purposes of submitting compliance certifications or establishing whether or not a person has violated or is in violation of any standard in this permit, nothing in the permit shall preclude the use, including the exclusive use, of any credible evidence or information, relevant to whether a source would have been in compliance with applicable requirements if the appropriate performance or compliance test had been performed.

9.A Standard Administrative Conditions

The following federally-enforceable administrative permit conditions apply to the Lompoc Internal Combustion Engines:

A.1 **Compliance with Permit Conditions:**

(a) The permittee shall comply with all permit conditions in Sections 9.A, 9.B and 9.C.

(b) This permit does not convey property rights or exclusive privilege of any sort.

(c) Any permit noncompliance constitutes a violation of the Clean Air Act and is grounds for enforcement action; for permit termination, revocation and re-issuance, or modification; or for denial of a permit renewal application.

(d) It shall not be a defense for the permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

(e) A pending permit action or notification of anticipated noncompliance does not stay any permit condition.

(f) Within a reasonable time period, the permittee shall furnish any information requested by the Control Officer, in writing, for the purpose of determining:

(i) compliance with the permit, or
(ii) whether or not cause exists to modify, revoke and reissue, or terminate a permit or for an enforcement action. *[Re: 40 CFR Part 70.6, APCD Rules 1303.D.1]*

(g) In the event that any condition herein is determined to be in conflict with any other condition contained herein, then, if principles of law do not provide to the contrary, the condition most protective of air quality and public health and safety shall prevail to the extent feasible.

A.2 **Emergency Provisions:** The permittee shall comply with the requirements of the APCD, Rule 505 (Upset/Breakdown rule) and/or APCD Rule 1303.F, whichever is applicable to the emergency situation. In order to maintain an affirmative defense under Rule 1303.F, the permittee shall provide the APCD, in writing, a "notice of emergency" within 2 working days of the emergency. The "notice of emergency" shall contain the information/documentation listed in Sections (1) through (5) of Rule 1303.F. *[Re: 40 CFR 70.6, APCD Rule 1303.F]*

A.3 **Compliance Plan:**

(a) The permittee shall comply with all federally enforceable requirements that become applicable during the permit term in a timely manner.

(b) For all applicable equipment, the permittee shall implement and comply with any specific compliance plan required under any federally-enforceable rules or standards. *[Re: APCD Rule 1302.D.2]*

A.4 **Right of Entry:** The Regional Administrator of USEPA, the Control Officer, or their authorized representatives, upon the presentation of credentials, shall be permitted to enter upon the premises where a Part 70 Source is located or where records must be kept:

(a) To inspect the stationary source, including monitoring and control equipment, work practices, operations, and emission-related activity;
(b) To inspect and duplicate, at reasonable times, records required by this Permit to Operate;

(c) To sample substances or monitor emissions from the source or assess other parameters to assure compliance with the permit or applicable requirements, at reasonable times. Monitoring of emissions can include source testing. *[Re: APCD Rule 1303.D.2]*

A.5 **Permit Life:** The Part 70 permit shall become invalid three years from the date of issuance unless a timely and complete renewal application is submitted to the APCD. Any operation of the source to which this Part 70 permit is issued beyond the expiration date of this Part 70 permit and without a valid Part 70 operating permit (or a complete Part 70 permit renewal application) shall be a violation of the CAAA, § 502(a) and 503(d) and of the APCD rules.

The permittee shall apply for renewal of the Part 70 permit no later than 180-days before the permit expiration date. Upon submittal of a timely and complete renewal application, the Part 70 permit shall remain in effect until the Control Officer issues or denies the renewal application. *[Re: APCD Rule 1304.D.1]*

A.6 **Payment of Fees:** The permittee shall reimburse the APCD for all its Part 70 permit processing and compliance expenses for the stationary source on a timely basis. Failure to reimburse on a timely basis shall be a violation of this permit and of applicable requirements and can result in forfeiture of the Part 70 permit. Operation without a Part 70 permit subjects the source to potential enforcement action by the APCD and the USEPA pursuant to section 502(a) of the Clean Air Act. *[Re: APCD Rules 1303.D.1 and 1304.D.11, 40 CFR 70.6]*

A.7 **Prompt Reporting of Deviations:** The permittee shall submit a written report to the APCD documenting each and every deviation from the requirements of this permit or any applicable federal requirements within 7-days after discovery of the violation, but not later than 180-days after the date of occurrence. The report shall clearly document 1) the probable cause and extent of the deviation, 2) equipment involved, 3) the quantity of excess pollutant emissions, if any, and 4) actions taken to correct the deviation. The requirements of this condition shall not apply to deviations reported to APCD in accordance with Rule 505. *Breakdown Conditions*, or Rule 1303.F *Emergency Provisions*. *[APCD Rule 1303.D.1, 40 CFR 70.6(a) (3)]*

A.8 **Reporting Requirements/Compliance Certification:** The permittee shall submit compliance certification reports to the USEPA and the Control Officer every six-months. These reports shall be submitted on APCD forms and shall identify each applicable requirement/condition of the permit, the compliance status with each requirement/condition, the monitoring methods used to determine compliance, whether the compliance was continuous or intermittent, and include detailed information on the occurrence and correction of any deviations (excluding emergency upsets) from permit requirement. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by

September 1st and March 1st, respectively, each year. Supporting monitoring data shall be submitted in accordance with the "Semi-Annual Compliance Verification Report" condition in section 9.C. The permittee shall include a written statement from the responsible official, which certifies the truth, accuracy, and completeness of the reports. *[Re: APCD Rules 1303.D.1, 1302.D.3, 1303.2.c]*

A.9 **Federally-Enforceable Conditions:** Each federally-enforceable condition in this permit shall be enforceable by the USEPA and members of the public. None of the conditions in the APCD-only enforceable section of this permit are federally-enforceable or subject to the public/USEPA review. *[Re: CAAA, § 502(b)(6), 40 CFR 70.6]*

A.10 **Recordkeeping Requirements**: Records of required monitoring information shall include the following:

(a) The date, place as defined in the permit, and time of sampling or measurements;
(b) The date(s) analyses were performed;
(c) The company or entity that performed the analyses;
(d) The analytical techniques or methods used;
(e) The results of such analyses; and
(f) The operating conditions as existing at the time of sampling or measurement;

The records (electronic or hard copy), as well as all supporting information including calibration and maintenance records, shall be maintained for a minimum of five (5) years from date of initial entry by PXP and shall be made available to the APCD upon request. *[Re: APCD Rule 1303.D.1.f, 40CFR70.6(a)(3)(ii)(A)]*

A.11 **Conditions for Permit Reopening:** The permit shall be reopened and revised for cause under any of the following circumstances:

(a) Additional Requirements: If additional applicable requirements (e.g., NSPS or MACT) become applicable to the source which has an unexpired permit term of three (3) or more years, the permit shall be reopened. Such a reopening shall be completed no later than 18 months after promulgation of the applicable requirement. However, no such reopening is required if the effective date of the requirement is later than the date on which the permit is due to expire, unless the original permit or any of its terms and conditions has been extended. All such re-openings shall be initiated only after a 30 day notice of intent to reopen the permit has been provided to the permittee, except that a shorter notice may be given in case of an emergency.

(b) Inaccurate Permit Provisions: If the APCD or the USEPA determines that the permit contains a material mistake or that inaccurate statements were made in establishing the emission standards or other terms or conditions of the permit, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

(c) Applicable Requirement: If the APCD or the USEPA determines that the permit must be revised or revoked to assure compliance with any applicable requirement including a

federally-enforceable requirement, the permit shall be reopened. Such re-openings shall be made as soon as practicable.

Administrative procedures to reopen and revise/revoke/reissue a permit shall follow the same procedures as apply to initial permit issuance. Re-openings shall affect only those parts of the permit for which cause to reopen exists.

If a permit is reopened, the expiration date does not change. Thus, if the permit is reopened, and revised, then it will be reissued with the expiration date applicable to the re-opened permit. *[Re: 40 CFR 70.7, 40 CFR 70.6]*

9.B. Generic Conditions

The generic conditions listed below apply to all emission units, regardless of their category or emission rates. These conditions are federally enforceable. Compliance with these requirements is discussed in Section 3. In case of a discrepancy between the wording of a condition and the applicable federal or APCD rule(s), the wording of the rule shall control.

B.1 **Circumvention (Rule 301):** A person shall not build, erect, install, or use any article, machine, equipment or other contrivance, the use of which, without resulting in a reduction in the total release of air contaminants to the atmosphere, reduces or conceals an emission which would otherwise constitute a violation of Division 26 (Air Resources) of the Health and Safety Code of the State of California or of these Rules and Regulations. This Rule shall not apply to cases in which the only violation involved is of Section 41700 of the Health and Safety Code of the State of California, or of APCD Rule 303. *[Re: APCD Rule 301]*

B.2 **Visible Emissions (Rule 302):** PXP shall not discharge into the atmosphere from any single source of emission any air contaminants for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated as No. 1 on the Ringlemann Chart, as published by the United States Bureau of Mines, or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subsection B.2(a) above. *[Re: APCD Rule 302]*

B.3 **Nuisance (Rule 303):** No pollutant emissions from any source at PXP shall create nuisance conditions. Operations shall not endanger health, safety or comfort, nor shall they damage any property or business. *[Re: APCD Rule 303]*

B.4 **Specific Contaminants (Rule 309):** PXP shall not discharge into the atmosphere from any single source sulfur compounds and combustion contaminants (particulate matter) in excess of the applicable standards listed in Sections A through E of Rule 309. *[Re: APCD Rule 309]*

B.5 **Sulfur Content of Fuels (Rule 311):** PXP shall not burn fuels with a sulfur content in excess of 796 ppm_{vd} or 50 gr/100 scf (calculated as H_2S) for gaseous fuel. Compliance with this condition

shall be based on annual measurements of the fuel gas using ASTM or other APCD-approved methods. *[Reference: APCD Rule 311.B]*

B.6 **Emergency Episode Plan (Rule 603):** During emergency episodes, PXP shall implement the Emergency Episode Plan approved by the APCD on December 12, 2000. *[Re: APCD Rule 603]*

B.7 **Oil and Natural Gas Production MACT:** PXP shall comply with the requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPS) for Oil and Natural Gas Production and Natural Gas Transmission and Storage (promulgated June 17, 1999). At a minimum, PXP shall maintain records in accordance with 40 CFR Part 63, Subpart A, Section 63.10(b) (1) and (3). *[Re: 40 CFR 63, Subpart HH]*

9.C Requirements and Equipment Specific Conditions

Federally-enforceable conditions, including emissions and operations limits, monitoring, recordkeeping and reporting are included in this section for each specific group of equipment as well as other non-generic requirements.

C.1 **Emission Reduction Credits - Removal of Engines**: Two internal combustion engines, Waukesha 140 (s/n: 11925) and Leroi 226 (s/n: 10407), shall be permanently removed from any future operation within the South Central Coast Air Basin. PXP shall maintain written documentation that tracks the operational status and/or ownership of these internal combustion engines. PXP shall comply with the requirements of DOI #0005. *[Re: ATC/PTO 9971]*

C.2 **Shift In Load - Fresh Water Pumps:** In order to avoid creating a shift-in-load to a polluting engine, PXP shall use only electric motors for powering the fresh water pumps serving the two 5,000 bbl fresh water storage tanks in the Lompoc Oilfield. *[Re: ATC/PTO 9971]*

C.3 **Recordkeeping:** PXP shall maintain all records and logs required by this permit or any applicable federal rule or regulation for a minimum of five calendar years from the date of information collection and log entry at the lease. These records or logs shall be readily accessible and be made available to the APCD upon request. *[Re: 40 CFR 70.6, APCD Rule 1303]*

C.4 **Semi-Annual Monitoring/Compliance Verification Reports:** PXP shall submit a report to the APCD every six-months to verify compliance with the emission limits and other requirements of this permit. The reporting periods shall be each half of the calendar year, e.g., January through June for the first half of the year. These reports shall be submitted by September 1st and March 1st, respectively, each year, and shall be in a format approved by the APCD. All logs and other basic source data not included in the report shall be available to the APCD upon request. The second report shall also include an annual report for the prior four quarters. The report shall include the following information:

a) Results of the fuel gas analyses for sulfur content (ppmv).

b) Emissions: Monthly fuel use and NO_x and ROC emissions from both permitted and exempt equipment.

9.D APCD-Only Conditions

The following section lists permit conditions that are not federally-enforceable (i.e., not enforceable by the USEPA or the public). However, these conditions are enforceable by the APCD and the State of California. These conditions have been determined as being necessary to ensure that operation of the facility complies with all applicable local and state air quality rules, regulations and laws. Failure to comply with any of these conditions shall be a violation of APCD Rule 206, this permit, as well as any applicable section of the California Health & Safety Code.

D.1 **Internal Combustion Engine Operational Limits:** The following limits apply to all internal combustion engines included in this permit:

(a) *Hourly Heat Input*. Maximum heat input (MMBtu/hour) to the internal combustion engines listed in this permit is restricted to the values listed in the "Use per Hour" column of Table 5.1-1.

(b) *Annual Heat Input*. Maximum annual heat input (MMBtu/year) to the internal combustion engines listed in this permit is restricted to the values listed in the "Use per Year" column of Table 5.1-1.

(c) *Fuel Type*. Engines shall be fired on gaseous fuels only.

(d) *Fuel Gas Sulfur Limit*. The total sulfur content (calculated as H_2S at standard conditions, 60^o F and 14.7 psia) of the gaseous fuel burned at the facility shall not exceed 50 grains per 100 cubic feet (796 ppmv). PXP shall measure the total sulfur content annually in accordance with ASTM-D1072 or an APCD approved equivalent method. Records shall be kept on site and made available for inspection by the APCD upon request.

(e) *Engine Identification*. Each engine shall have its PXP identification number permanently and legibly liquid welded or stamped into the engine block. The location of the identifying stamp shall be the same for each engine model and shall be readily accessible for inspection.

(f) *Reference List*. For each engine's unique PXP identification number, stamped or liquid welded into the engine block per Condition 9.D.1.(e), PXP shall maintain a reference list containing the make, model, serial number, maximum de-rated HP and the corresponding RPM.

D.2 **Compliance Monitoring:** The following compliance monitoring requirements shall apply:

(a) *Fuel Use Monitoring*. PXP shall comply with the APCD approved *Fuel Use Monitoring Plan.* This Plan is incorporated by reference as an enforceable part of this permit. The Plan may be modified only upon written approval by the District and shall be maintained on-site and made available to District personnel upon request.

(b) *Hours monitoring*. The hours of operation per day of each engine in Table 5.1-1, shall be monitored and logged each day.

D.3 **Derated Internal Combustion Engines:** The orifice plate on each derated engine (ID #4497, 4510, 4499 and 4500) shall not have an orifice greater than the diameter listed in the Table 5.1-1. The orifice plate shall be made from 10 gauge mild steel stock with a sharp edge circular orifice. The orifice plate shall be located between the carburetor and the intake manifold. The orifice plate shall be in place at all times the engine operates. PXP shall inspect one orifice plate each calendar quarter, and all four should be inspected each calendar year. In addition, PXP shall assist District personnel in the measurement and/or inspection of an orifice plate upon request. PXP shall replace an orifice plate within thirty (30) calendar days after any inspection if it shows corrosion or degradation that enlarges the specified hole diameter, or if there is any other indication the plate is not properly restricting fuel flow to the engine. The APCD shall be notified in writing each time an orifice plate is replaced. This notification shall be received by the APCD no more than 10-days after completion of the orifice plate inspection/replacement work.

D.4 **Severability:** In the event that any condition herein is determined to be invalid, all other conditions shall remain in force.

D.5 **Compliance:** Nothing contained within this permit shall be construed to allow the violation of any local, State or Federal rules regulations, ambient air quality standards or air quality increments.

D.6 **Process Stream Sampling and Analysis:** PXP shall sample analyze the process streams listed in Section 4.5 of this permit according to the methods and frequency detailed in that Section. All process stream samples shall be taken according to APCD approved ASTM methods and must follow traceable chain of custody procedures.

D.7 **Process Monitoring Systems - Operation and Maintenance:** All facility process monitoring devices listed in Section 4.4 shall be properly operated and maintained according to manufacturer recommended specifications. PXP shall comply with the *Process Monitor Calibration and Maintenance Plan* approved by the District on August 30, 2002, for the engines listed on this permit. This Plan is incorporated by reference as an enforceable part of this permit. The Plan may be modified only upon written approval by the APCD and shall be maintained on-site and made available to APCD personnel upon request.

D.8 **Annual Compliance Verification Reports:** PXP shall submit a report to the APCD, by March 1st of each year containing the information listed below and shall document compliance with all applicable permit requirements. These reports shall be in a format approved by the APCD. All logs and other basic source data not included in the report shall be available to the

APCD upon request. Pursuant to Rule 212, the annual report shall include a completed *APCD Annual Emissions Inventory* questionnaire, or alternatively, the questionnaire may be complete/submitted electronically via the APCD website. The report shall include the following information:

(a) Monthly fuel volume totals based on Condition D.2(a) of this permit. Monthly records shall be generated no more than 90-days after the close of the subject month.

(b) The ICE operating hours of each engine in table 5.1-1 on a monthly basis.

(c) Written documentation of the fuel sulfur content per Condition D.1.(d).
(d) The heating value of the gaseous fuel (Btu/SCF).

(e) The annual emissions totals of all pollutants in tons per year for each emission unit and summarized for the entire facility.

(f) Date and engine ID of each orifice plate inspection required by condition D.3.

D.9 **Mass Emission Limitations**: Mass emissions for each equipment item (i.e., emissions unit) associated with the Lompoc internal combustion engines shall not exceed the values listed in Table 5.1-3 and 5.1-4. Emissions for the entire facility shall not exceed the total limits listed in Table 5.2.

D.10 **Grounds for Revocation:** Failure to abide by and faithfully comply with this permit or any Rule, Order or Regulation shall constitute grounds for the APCO to petition for permit revocation pursuant to California Health & Safety Code Section 42307 *et seq*.

D.11 **Odorous Organic Sulfides (Rule 310):** PXP shall not discharge into atmosphere H_2S and organic sulfides that result in a ground level impact beyond the PXP property boundary in excess of either 0.06 ppmv averaged over 3 minutes and 0.03 ppm_v averaged over 1 hour. *[Re: APCD Rule 310]*

Air Pollution Control Officer

_____

_____
Date

NOTES:

(a) This permit supersedes all previous APCD PTO permits issued for the Lompoc internal combustion engines
(b) Permit Reevaluation Due Date: December 2012
(c) Part 70 Operating Permit Expiration Date: December 2012

10.0 Attachments

10.1 Emission Calculation Documentation
10.2 Fee Calculations
10.3 IDS Database Emission Tables
10.4 Equipment List

10.1 Emission Calculation Documentation PXP Lompoc Internal Combustion Engines

This attachment contains all relevant emission calculation documentation used for the emission tables in Section 5. Refer to Section 4 for the general equations. The letter A refers to Tables 5.1-1 and 5.1-2.

Reference A - Internal Combustion Engines

→ The maximum operating schedule is in units of hours

→ Gaseous fuel default characteristics:
- ⇒ HHV = 900 Btu/scf
- ⇒ Fuel S = 796 ppmvd as H_2S for all equipment

→ Brake Specific Fuel Consumption (BSFC) for each model of ICE is listed in Table 5.1-1

→ Emission factor units (lb/MMBtu) are based on HHV.

→ The NO_x emission factor for all uncontrolled IC engines is based on factors dictated by the APCD Hearing Board. The NO_x emission factor for controlled IC engines are based on APCD Rule 333 limits.

→ ROC emission factors for all uncontrolled IC engines are based on factors dictated by the APCD Hearing Board. The ROC emission factors for controlled IC engines are based on APCD Rule 333 limits, as given by the SBCAPCD PGD on reciprocating ICEs dated January 27, 1998, page 7.

→ The CO emission factor for all uncontrolled IC engines is based on factors dictated by the APCD Hearing Board. The CO emission factor for controlled IC engines are based on APCD Rule 333 limits, as given by the SBCAPCD PGD on reciprocating ICEs dated January 27, 1998, page 7.

→ SO_2 emission limits (factors) are based on mass balance based on fuel S. Thus, for gas-fired and diesel-fired IC engines:
- ⇒ SO_2 (lb/MMBtu)= 0.169 lb SO_2/scf of H_2S * 1/HHV*(ppmvd S in fuel) = 0.100

→ PM emission limits are based on USEPA, AP-42, Table 3.2.4 (gas-fired ICE) as given by the SBCAPCD PGD on reciprocating ICEs dated January 27, 1998, page 7.

10.2 Fee Calculations

Emission fees for the permit reevaluation of PTO 9971 are based on Fee Schedule A of APCD Rule 210. Fees are based on the final issuance date of this permit.

All work performed with respect to implementing the requirements of the Part 70 Operating Permit program are assessed on a cost reimbursement basis pursuant to APCD Rule 210.

FEE STATEMENT
PT-70/Reeval No. 09971 - R4
FID: 04218 Lompoc IC Engines / SSID: 04632

Santa Barbara County
Air Pollution Control District

Device Fee

Device No.	Device Name	Fee Schedule	Qty of Fee Units	Fee per Unit	Fee Units	Max or Min. Fee Apply?	Number of Same Devices	Pro Rate Factor	Device Fee	Penalty Fee?	Fee Credit	Total Fee per Device
004504	IC Engine: #11605	A3	0.410	440.07	Per 1 million Btu input	No	1	1.000	180.43	0.00	0.00	180.43
004505	IC Engine: #9709	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
004506	IC Engine: #9305	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
004508	IC Engine: #8501	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
007034	IC Engine: #9229	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
004509	IC Engine: #8483	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
004498	IC Engine: #7440	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
004495	IC Engine: #12020	A3	0.510	440.07	Per 1 million Btu input	No	1	1.000	224.44	0.00	0.00	224.44
004497	IC Engine: #12203	A3	0.430	440.07	Per 1 million Btu input	No	1	1.000	189.23	0.00	0.00	189.23
004510	IC Engine: #11528	A3	0.500	440.07	Per 1 million Btu input	No	1	1.000	220.04	0.00	0.00	220.04
004499	IC Engine: #11662	A3	0.450	440.07	Per 1 million Btu input	No	1	1.000	198.03	0.00	0.00	198.03
004500	IC Engine: #11436	A3	0.450	440.07	Per 1 million Btu input	No	1	1.000	198.03	0.00	0.00	198.03
	Device Fee Sub-Totals =								**$2,556.81**	**$0.00**	**$0.00**	
	Device Fee Total =											**$2,556.81**

Permit Fee

Fee Based on Devices **2,556.81**

Fee Statement Grand Total = $2,556

10.3 IDS Database Emission Tables

Table 1
Permitted Potential to Emit (PPTE)

	NO_X	ROC	CO	SO_X	TSP	PM_{10}
PTO 9971 – Lompoc Internal Combustion Engines						
lb/day	264.16	14.28	221.86	20.73	1.39	1.39
tons/year	48.21	2.61	40.49	3.78	0.25	0.25

Table 2
Facility Potential to Emit (FPTE)

	NO_X	ROC	CO	SO_X	TSP	PM_{10}
PTO 9971 – Lompoc Internal Combustion Engines						
Lbs/day	264.16	14.28	221.86	20.73	1.39	1.39
tons/year	48.21	2.61	40.49	3.78	0.25	0.25

Table 3
Federal PT-70 Facility Potential to Emit (PT 70 FPTE)

	NO_X	ROC	CO	SO_X	TSP	PM_{10}
PTO 9971 – Lompoc Internal Combustion Engines						
lbs/day	264.16	14.28	221.86	20.73	1.39	1.39
tons/year	48.21	2.61	40.49	3.78	0.25	0.25

Table 4
Facility Net Emission Increase Since 1990 (FNEI-90)

	NO_X	ROC	CO	SO_X	TSP	PM_{10}
PTO 9971 – Lompoc Internal Combustion Engines						
lbs/day	5.04	0.24	1.20	0.48	0.01	0.01
tons/year	0.96	0.05	0.21	0.07	< 0.01	< 0.01

Table 5
Facility Exempt Emissions (FXMT) (TO BE PROVIDED)

	NO_X	ROC	CO	SO_X	TSP	PM_{10}
PTO 9971 – Lompoc Internal Combustion Engines						

lbs/day	0.00	0.00	0.00	0.00	0.00	0.00
tons/year	0.00	0.00	0.00	0.00	0.00	0.00

10.4 Equipment List

Thursday, August 06, 2009
Santa Barbara County APCD – Equipment List

PT-70/Reeval 09971 R4 / FID: 04218 Lompoc IC Engines / SSID: 04632

A PERMITTED EQUIPMENT

1 Unmodified Rich-Burn Non-Cyclic ICE

1.1 IC Engine: #11605

Device ID #	**004504**	***Device Name***	**IC Engine: #11605**
Rated Heat Input	0.410 MMBtu/Hour	*Physical Size*	39.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	11605
Model	425	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: nameplate On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.		

1.2 IC Engine: #9709

Device ID #	**004505**	***Device Name***	**IC Engine: #9709**
Rated Heat Input	0.510 MMBtu/Hour	*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	9709
Model	HEB	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: nameplate On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.		

1.3 IC Engine: #9305

Device ID #	**004506**	***Device Name***	**IC Engine: #9305**
Rated Heat Input	0.510 MMBtu/Hour	*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	9305
Model	605	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: nameplate On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.		

1.4 IC Engine: #8501

Device ID #	**004508**	***Device Name***	**IC Engine: #8501**
Rated Heat Input	0.510 MMBtu/Hour	*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	8501
Model	605	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: nameplate On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S		

1.5 IC Engine: #9229

Device ID #	**007034**	***Device Name***	**IC Engine: #9229**
Rated Heat Input	0.510 MMBtu/Hour	*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	9229
Model	HEB	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: nameplate On line: 8,760 hr/yr		

	Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.

1.6 IC Engine: #8483

Device ID #	**004509**	***Device Name***	**IC Engine: #8483**
Rated Heat Input	0.510 MMBtu/Hour	*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	8483
Model	HEB	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: nameplate On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.		

1.7 IC Engine: #7440

Device ID #	**004498**	***Device Name***	**IC Engine: #7440**
Rated Heat Input	0.510 MMBtu/Hour	*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	7440
Model	605	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: nameplate On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.		

1.8 IC Engine: #12020

Device ID #	**004495**	***Device Name***	**IC Engine: #12020**
Rated Heat Input	0.510 MMBtu/Hour	*Physical Size*	46.00 Brake Horsepower
Manufacturer	M & M	*Operator ID*	12020
Model	605	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: nameplate		

	On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.

2 Derated Rich-Burn Non-Cyclic ICE

2.1 IC Engine: #12203

Device ID #	**004497**	***Device Name***	**IC Engine: #12203**
Rated Heat Input	0.430 MMBtu/Hour	*Physical Size*	48.90 Brake Horsepower
Manufacturer	M & M	*Operator ID*	12203
Model	504	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: orifice plate @ 0.935 inches On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.		

2.2 IC Engine: #11528

Device ID #	**004510**	***Device Name***	**IC Engine: #11528**
Rated Heat Input	0.500 MMBtu/Hour	*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	11528
Model	145	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: orifice plate @ 0.922 inches On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.		

2.3 IC Engine: #11662

Device ID #	**004499**	***Device Name***	**IC Engine: #11662**
Rated Heat Input	0.450 MMBtu/Hour	*Physical Size*	49.50 Brake Horsepower

Manufacturer	Waukesha	*Operator ID*	11662
Model	140	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: orifice plate @ 0.980 inches On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.		

2.4 IC Engine: #11436

Device ID #	**004500**	***Device Name***	**IC Engine: #11436**
Rated Heat Input	0.450 MMBtu/Hour	*Physical Size*	49.50 Brake Horsepower
Manufacturer	Waukesha	*Operator ID*	11436
Model	140	*Serial Number*	
Location Note			
Device Description	Engine use: Pumping Unit Capacity limits: orifice plate @ 0.980 inches On line: 8,760 hr/yr Fuel parameters: Fuel HHV: 900 Btu/scf for NG, sulfur: 796 ppmvd as H2S.		